
APPENDICES

APPENDIX A.—SCHEDULE

APPENDIX B.—INSTRUCTIONS TO SPECIAL AGENTS

APPENDIX A.

STREET RAILWAYS.

Name of company
 State City
 General offices at

UNITED STATES CENSUS OFFICE,
 Washington, D. C., October 15, 1902.

By section 7 of the act of Congress for the establishment of a permanent Census Office, passed March 6, 1902, the Director of the Census is required to prepare a report on the street railways of the United States, and the following schedule has been formulated for that purpose.

Mr. Thomas Commerford Martin, of New York city, expert special agent, is in charge of the electrical branch of this inquiry.

The system of accounting used in this schedule follows the form devised by the Street Railway Accountants' Association of America.

The information returned on this schedule should cover the business year of the establishment most nearly conforming to the year ending June 30, 1902. All questions that require a fixed time, such as mileage or track, cash on hand, etc., should be of the date of the last day of the year covered by the report.

WILLIAM R. MERRIAM,
 Director of the Census.

Extract from act of Congress, March 3, 1899:

SECTION 22. * * * "And every president, treasurer, secretary, director, agent, or other officer of every corporation, and every establishment of productive industry, whether conducted as a corporate body, limited liability company, or by private individuals, from which answers to any of the schedules, inquiries, or statistical interrogatories provided for by this act are herein required, who shall, if thereto requested by the Director, supervisor, enumerator, or special agent, willfully neglect or refuse to give true and complete answers to any inquiries authorized by this act, or shall willfully give false information, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not exceeding ten thousand dollars, to which may be added imprisonment for a period not exceeding one year."

CERTIFICATE.

This is to certify that the information contained in this schedule is complete and correct to the best of my knowledge and belief, and it covers the period from....., 190., to....., 190...

(Signature and official designation of the person
 furnishing the information.)

(Signature of special agent.)

1. Date of charter under which organized
2. If a consolidated company, give names of constituent companies and dates of consolidation
3. If a controlling company, give names of constituent companies and dates such control began
4. If a reorganized company, give name of original company and date of reorganization
5. If a subsidiary or leased company, give name and address of controlling company or lessor and date such control began or date of lease
6. Kind of motive power used (electric, cable, animal, etc.)
7. If there have been changes in the power employed, give date and character of the change
8. Is electric current generated for sale for light or power?
9. Give name of city or cities in which the road is operated, and if in rural districts, name the towns and counties
10. Total length of streets or roads or private right of way over which cars are run (in miles)
11. If track extends into more than one state, give the number of single track miles in each state
12. Character and length of line (in single track miles):
 Single trolley overhead.....; double trolley overhead.....;
 conduit trolley.....; third rail.....; accumulator system
; cable.....; steam.....; animal.....
13. Length of track owned by other companies upon which cars of this company are run either by agreement or contract (in single track miles)
14. Is the municipal franchise limited in time; and, if so, for how long a time is it granted?

15. ACCIDENTS.

| | TOTAL. | |
|---------------------|---------|----------|
| | Killed. | Injured. |
| Passengers | | |
| Employees | | |
| Other persons | | |
| Total | | |

16. TRAFFIC, MILEAGE, AND MISCELLANEOUS STATISTICS.

| | Number. |
|---|---------|
| Fare passengers carried | |
| Transfer passengers carried | |
| Total passengers carried | |
| Passenger-car mileage | |
| Freight, mail, express, and other car mileage | |
| Total car mileage | |
| Passenger-car hours | |
| Freight, mail, express, and other car hours | |
| Total car hours | |
| Transfer points | |

Maximum speed, miles per hour, as per ordinance, within city limits.....
 outside city limits.....
 Rate of fare per passenger.....
 Are tickets sold; if so, at what rate to the passenger?.....
 Are mails carried for the Government?.....

| | Number. |
|---|---------|
| Miles of exclusive telephone line in use for operation of road | |
| Stations | |
| Power houses | |
| Car houses | |
| Horses owned | |
| Lamps used in lighting buildings, shops, car houses, etc., and ways: Arc lamps..... Incandescent lamps..... | |

State whether the company owns and operates any parks or pleasure resorts; if so, how many and cost of investment; if hired, annual rental. Number of visitors annually

Miles of new road constructed and opened for operation during year

Steam railroad crossings protected (number)

Steam railroad crossings unprotected (number)

STREET AND ELECTRIC RAILWAYS.

17. TRACK.

| | Owned. | Leased. | Operated under trackage rights. | Total operated. |
|--|--------|---------|---------------------------------|-----------------|
| Length of road (first main track) ¹ | | | | |
| Length of second main track | | | | |
| Total length of main track..... | | | | |
| Length of sidings and turn-outs..... | | | | |
| Total computed as single track | | | | |

¹ Length to be stated in miles and decimals of a mile carried to three places.

Miles of track on private right of way owned by road

Miles of track on private right of way not owned by road

How many miles of single track are within city or municipal ordinance limits?..

18. ELECTRIC LINE CONSTRUCTION.

| | LENGTH OF LINE IN MILES AND FEET. | | | |
|---|-----------------------------------|----------------------------|--------------|----------------|
| | Span-wire construction. | Side-bracket construction. | Center pole. | Poles to mile. |
| 1. Single overhead trolley..... | | | | |
| 2. Double overhead trolley..... | | | | |
| 3. Miles of line with iron and steel poles..... | | | | |
| 4. Miles of line with wooden poles..... | | | | |
| 5. Miles of track with cast welded joints..... | | | | |

19. CARS, ETC.

| | Total number. | With electric equipment. | Without electric equipment. |
|---|---------------|--------------------------|-----------------------------|
| Closed passenger cars..... | | | |
| Open passenger cars | | | |
| Combination cars (open and closed)..... | | | |
| Combination cars (passenger and freight or express) | | | |
| Total passenger cars | | | |
| Mail cars..... | | | |
| Express and freight cars..... | | | |
| Work cars..... | | | |
| Snow plows..... | | | |
| Sweepers..... | | | |
| Miscellaneous..... | | | |
| Total..... | | | |

20. FENDERS AND BRAKES.

| Total number of cars. | Equipped with fenders. | Equipped with hand brakes. | Equipped with air brakes. | Equipped with electric brakes. | Equipped with track brakes. | Equipped with friction brakes. | Equipped with more than one kind of brake. |
|-----------------------|------------------------|----------------------------|---------------------------|--------------------------------|-----------------------------|--------------------------------|--|
| | | | | | | | |

21. HEATING OF CARS.

| | Number. |
|------------------------------------|---------|
| Cars with electric heaters..... | |
| Cars heated by stoves | |
| Cars heated by hot water | |
| Cars heated by other systems | |

22. LIGHTING OF CARS.

| | Number. |
|-----------------------------------|---------|
| Cars lighted by electricity | |
| Cars lighted by gas | |
| Cars lighted by oil | |

23. WEIGHT OF RAILS.

Weight of rails per yard:

Steel, maximum.....pounds.

Steel, minimum.....pounds.

Name style (girder, tee, center groove, full groove, etc.):

24. CONDUIT SYSTEMS FOR DISTRIBUTION.

| | Miles of street occupied. | Total miles of duct. |
|--|---------------------------|----------------------|
| Concrete | | |
| Terra cotta and vitrified clay..... | | |
| Iron pipe, plain or lined with cement..... | | |
| Wooden duct, etc..... | | |

25. BRIDGES BUILT FOR ROAD.

| | Number. | Aggregate length (feet). |
|--|---------|--------------------------|
| Iron or steel bridges | | |
| Wooden bridges..... | | |
| Wooden trestles or trestle bridges | | |
| Masonry viaducts | | |
| Tunnels for cars..... | | |
| Total | | |

26. POWER PLANT EQUIPMENT.

| GENERATING POWER PLANT. | Number. | Total capacity in horse-power. |
|---|---------|--------------------------------|
| 1. Steam engines: | | |
| Under 500 H. P. | | |
| Over 500 H. P. and under 1,000 H. P. | | |
| Over 1,000 H. P. and under 2,000 H. P. | | |
| 2,000 H. P. and over. | | |
| 2. Water wheels: | | |
| Under 500 H. P. | | |
| Over 500 H. P. and under 1,000 H. P. | | |
| Over 1,000 H. P. and under 2,000 H. P. | | |
| 2,000 H. P. and over. | | |
| 3. Gas engines. | | |
| 4. Boilers. | | |
| 5. Auxiliary engines for use within plant as accessories, etc. | | |

27. ELECTRICAL GENERATORS.

| | Number. | Total capacity in horse-power. | Voltage. |
|--|---------|--------------------------------|----------|
| 1. Direct current: | | | |
| Dynamos—Under 500 H. P. | | | |
| Over 500 H. P. and under 1,000 H. P. | | | |
| Over 1,000 H. P. and under 2,000 H. P. | | | |
| 2,000 H. P. and over. | | | |
| 2. Alternating current: | | | |
| Dynamos. phase— | | | |
| Under 500 H. P. | | | |
| Over 500 H. P. and under 1,000 H. P. | | | |
| Over 1,000 H. P. and under 2,000 H. P. | | | |
| 2,000 H. P. and over. | | | |
| 3. Transformers. | | | |
| 4. Storage battery, cells. | | | |
| 5. Boosters for outside feeders. | | | |
| 6. Auxiliary generators for use within plant. | | | |
| 7. Rotaries. | | | |

28. SUBSTATION EQUIPMENT.

| | Number. | Total capacity in horse-power. | Voltage. |
|---|---------|--------------------------------|----------|
| 1. Rotary converters, etc. | | | |
| 2. Transformers. | | | |
| 3. Storage battery, cells. | | | |
| Miscellaneous. | | | |
| Electric motors used in plant or substation for miscellaneous work: | | | |
| 1. Direct current. | | | |
| 2. Alternating. | | | |

29. MAINS AND FEEDERS.

| | |
|--|--|
| Miles of overhead feeder construction. | |
| Miles of underground feeder construction. | |

30. OUTPUT OF STATION.

| | |
|--|--|
| Kilowatt hour, average per day. | |
| Kilowatt hour, total for year. | |
| Horsepower of current, average per day. | |
| Horsepower of current, total for year. | |

31. CONSTRUCTION AND EQUIPMENT.

| | Cost during the year. | Cost to date. |
|---|-----------------------|---------------|
| 1. Organization. | \$..... | \$..... |
| 2. Engineering and superintendence. | | |
| 3. Right of way. | | |
| 4. Track and roadway construction. | | |
| 5. Electric line construction. | | |
| 6. Real estate used in operation of road. | | |
| 7. Buildings and fixtures used in operation of road. | | |
| 8. Investment real estate. | | |
| 9. Power plant equipment. | | |
| 10. Shop tools and machinery. | | |
| 11. Cars. | | |
| 12. Electric equipment of cars. | | |
| 13. Miscellaneous equipment. | | |
| 14. Interest and discount. | | |
| 15. Miscellaneous. | | |
| Total. | | |
| Electric light or power service. | \$..... | \$..... |
| Cost of road and equipment per mile of road owned. | | \$..... |

STREET AND ELECTRIC RAILWAYS.

REMARKS.

32. OPERATING EXPENSES.

Maintenance:

Ways and structures—

| | |
|--|---------|
| 1. Maintenance of track and roadway | \$..... |
| 2. Maintenance of electric, cable, etc., lines | |
| 3. Maintenance of buildings and fixtures | |
| Total | \$..... |

Equipment—

| | |
|---|--|
| 4. Maintenance of steam plant | |
| 5. Maintenance of electric, cable, etc., plant | |
| 6. Maintenance of cars | |
| 7. Maintenance of electric, cable, etc., equip- ment of cars | |
| 8. Maintenance of miscellaneous equipment | |
| 9. Miscellaneous shop expenses | |
| Total | |

Transportation:

Operation of power plant—

| | |
|---|--|
| 10. Power plant wages | |
| 11. Fuel for power | |
| 12. Water for power | |
| 13. Lubricants and wastes for power plant | |
| 14. Miscellaneous supplies and expenses of power plant | |
| 15. Hired power | |
| Total | |

Operation of cars—

| | |
|--|--|
| 16. Superintendence of transportation | |
| 17. Wages of conductors | |
| 18. Wages of motormen | |
| 19. Wages of other car service employees | |
| 20. Wages of car house employees | |
| 21. Car service supplies | |
| 22. Miscellaneous car service expenses | |
| 23. Cleaning and sanding track | |
| 24. Removal of snow and ice | |
| Total | |

General—

| | |
|---|--|
| 25. Salaries of general officers | |
| 26. Salaries of clerks | |
| 27. Printing and stationery | |
| 28. Miscellaneous office expenses | |
| 29. Storeroom expenses | |
| 30. Stable expenses | |
| 31. Advertising and attractions | |
| 32. Miscellaneous general expenses | |
| 33. Damages | |
| 34. Legal expenses in connection with damages | |
| 35. Other legal expenses | |
| 36. Rent of land and buildings | |
| 37. Rent of track and terminals | |
| 38. Insurance | |
| Total | |

Grand total

Wages, supplies, and expenses, incidental and electric service not
included in any other of the above items

For roads that sell light or power.

33. INCOME ACCOUNT.

INCOME.

| | |
|---|---------|
| Passengers | \$..... |
| Chartered cars | |
| Freight | |
| Mail | |
| Express | |
| Sale of electric current for light or power | |
| Miscellaneous | |
| Total | |

EXPENSES.

| | |
|--|---------|
| Total operating expenses | \$..... |
| Taxes: | |
| Real and personal property | \$..... |
| Capital stock | |
| Earnings | |
| Miscellaneous (specifying same) | |
| Interest: | |
| Funded debt | |
| Real estate mortgages | |
| Floating debt | |
| Rent of leased lines and terminals | |
| Miscellaneous | |
| Total | |
| Net income | \$..... |

34. BALANCE SHEET.

| ASSETS. | | LIABILITIES. | |
|---------------------------------------|---------|---------------------|---------|
| Kind. | Amount. | Kind. | Amount. |
| Cost of construction and real estate. | \$..... | Capital stock | \$..... |
| Cost of equipment | | Funded debt | |
| Other permanent invest- ments. | | Bills payable | |
| Cash on hand | | Interest due | |
| Bills receivable | | Dividends due | |
| Supplies | | Sundries | |
| Sundries | | | |
| Total | | Total | |

35. CAPITAL STOCK.

| | COMMON. | | PREFERRED. | | DIVIDENDS DUR- ING YEAR. | |
|-------------------------------------|----------------------|---------------------|----------------------|---------------------|-----------------------------|---------|
| | Number of shares. | Total par value. | Number of shares. | Total par value. | Rate. | Amount. |
| Authorized | | | | | | |
| Issued | | | | | | |
| Total number of stockholders, | | | | | | |

36. FUNDED DEBT.

| | |
|--------------------------|-----------|
| Amount authorized | \$..... |
| Amount outstanding | \$..... |
| Rates of interest, | per cent. |

APPENDIX.

37. EMPLOYEES' SALARIES, WAGES, ETC.

| | Average number employed during the year. | Total amount paid in wages and salaries during the year. |
|---|--|--|
| General officers..... | | \$. |
| Other officers (managers, superintendents, etc.)..... | | |
| Clerks..... | | |
| Foremen..... | | |
| Inspectors..... | | |
| Conductors..... | | |
| Motormen..... | | |
| Starters..... | | |
| Watchmen..... | | |
| Switchmen..... | | |
| Road and track men..... | | |
| Hostlers, stablemen, etc..... | | |
| Linemen..... | | |
| Engineers..... | | |
| Dynamo and switchboard men..... | | |
| Electricians..... | | |
| Firemen..... | | |
| Mechanics..... | | |
| Lamp trimmers..... | | |
| Other employees..... | | |
| Total..... | | |

38. NUMBER OF EMPLOYEES AT SPECIFIED DAILY RATES OF PAY.

[illegible]

APPENDIX B.

INSTRUCTIONS TO SPECIAL AGENTS.

Reports must be secured on Special Schedule No. 1 (Form 8-120) for all street railways that were in existence during any portion of the year ending June 30, 1902. Roads operated in rural as well as urban districts must be reported.

The schedule is prepared primarily for roads operated by electricity, as the greatest number and most important street railways have adopted this form of motive power. In cases where the road was operated in whole or in part by cable, animal, steam, or motive power other than electricity, answers must be made to all of the inquiries that are applicable, the words "animal," "steam," etc., being added by the agent to the different inquiries when necessary. For instance, Inquiry 31 calls for the cost of "electric line construction" and "electric equipment of cars;" in the report for a road operated by cable these inquiries should be changed to "cable line construction" and "cable equipment of cars," respectively.

In a number of instances independent street railway companies have recently been combined under one ownership. In such cases one report may be made for the operations of the entire company, provided the roads which were formerly operated as independent lines are located in the same city or immediate vicinity, but if the system of accounting will permit of the preparation of separate schedules, a separate report should be secured for each of the constituent companies. In preparing separate reports for subsidiary companies the name and address of the controlling company must be given in answer to Inquiry 5.

In addition to information as to railways, or portions of railways, that are in operation, the report should include the statistics for all additions or extensions during the year.

If a street railway is owned by a company whose general office is in another locality outside the territory assigned the agent, and a portion of the information must be obtained from such office, the agent should complete the schedule as far as possible from the data obtainable at the plant and forward it to the Census Office with a full statement of the facts, giving also the names and addresses of the persons from whom further information may be obtained.

Each agent will be furnished with a list giving the names and addresses of all street railways located in the territory assigned him, which were in existence, building, or chartered during the year ending June 30, 1902. He will be required to secure a report from each of these railroad companies provided the railroad plant was in operation, had been completed and ready for operation, or was in course of construction. Returns must not be secured for companies which had been chartered but which had not commenced the construction of the road. The fact that a railroad is contemplated or projected, but not necessarily building or in operation, is designated on the list as "proposed."

This list has been prepared from street railway directories and it may not contain the names of all street railways, therefore the agents must be constantly on the alert to discover other roads. They should make inquiry in each city or town they may visit for roads in that vicinity. If such roads are discovered and they are located in the territory assigned the agent he should proceed to secure the returns for the same.

The different cities must be visited in the order named on the list, unless the agent finds that railroad connections and local conditions make a change advisable. In such cases the character and necessity for the change must be given on the agent's daily report.

In all cases where an annual report of the railway is printed, a copy of the latest report should be secured and forwarded with the schedule. Copies should also be returned of printed tariff rates, reports of the directors or officers of the road, or other printed matter that would add to the information contained in the schedule.

A number of street railway companies generate electricity for sale to other roads, or for light, power, or other purposes. If, in such cases, the system of accounts used by the company will permit the preparation of separate and complete reports for the street railway plant and the electric light and power plant, respectively, the separate reports must be obtained. If the system of accounts will not permit of such a separation, one report should be secured for the entire plant, but in such cases a report must also be made on the schedule (Form 8-122) for electric light and power, and answers given to questions from 1 to 9, inclusive, and 15 to 29, inclusive, or such of them as are applicable to the plant reported.

All answers must be made clearly and neatly in ink. Amounts and values must be obtained from book accounts, if such accounts are available. Each question is to be answered. If any question is found not applicable and no amounts are reported, write the word "None."

An exact answer to each item enumerated in the several questions is what is required, and is what should be given if it can be secured with a reasonable amount of labor. It is anticipated, however, that in a number of plants the accounts are not kept under just such a series of items as has been enumerated. If the accounts cover two or more of the items enumerated for any of the inquiries, the total should be equitably apportioned for the reply to each subinquiry. In all cases where the answers are estimated the amounts must be preceded by the word "Estimate."

The cover of the schedule must be left blank, as the name of the company will be supplied after the receipt of the report at the Census Office.

Give on page 1 the name and location of the company, the address of the general offices, and the signature and official designation of the persons furnishing the information. If the address of the general or business office is at a different place from that of the plant, care must be taken to give both. The exact time covered by the report must be shown in the certificate.

Of the first 14 inquiries special attention is called to the following: 1. The date given must be the date of the charter under which the company reporting was organized and not the date of the original organization of the road unless the dates are the same. 7. Each change in the character of motive power must be described and the date given. If the change was only partial, the road being operated by two or more kinds of power, that fact must be noted. 10. The length of streets or roads over which cars are run must include length of track over fields or regions where there is no road or street. 12. Account in single track mileage, for the entire

length of the road operated by the company, including leased lines and lines operated under trackage rights. Separately report in answer to Inquiry 12 the number of miles of railway constructed but not in operation. 14. Give the number of years for which the franchises or amendments thereto were granted, and the date each expires.

INQUIRY 15.—ACCIDENTS.

In the return of killed or injured, "other persons" is meant to refer to foot passengers or persons riding in vehicles other than street cars that are in collision with the cars.

INQUIRY 16.—TRAFFIC, MILEAGE, AND MISCELLANEOUS STATISTICS.

Transfer passengers.—Many street railways voluntarily, or when required by law, give free transfers to passengers paying one fare, and desiring to ride over more than one line. These transfers are generally issued in the shape of tickets at junction transfer points, and sometimes the passengers step from one car to the other, without such tickets, under the eye of the transfer agent; and in this manner a continuous ride can be made over more than one road for the one fare. Careful count or estimate of transfers is made by all the roads granting them.

Passenger-car mileage.—It is an ordinary practice for street railways to keep an account of this mileage. Where it is not known, it can be arrived at by multiplying the average or actual number of cars in daily service by the number of miles run daily for the year. The other inquiry, "Passenger-car hours," is not obligatory, but is a new method of accounting for car operation and is already employed by some roads. Such roads, however, are large and the system of accounts is likely also to include the older and more familiar "Passenger-car mile." In many cases the mileage of other classes of service, such as freight, etc., will be a matter of estimate.

Maximum speed, etc.—The speed of street cars is almost universally regulated by specific law or ordinance, and the answer to the questions on speed within the city limits, will presumably be the limits which are thus enforced. When possible give the maximum speed within and outside the city limits.

Telephone lines for operation of roads.—Many street railways have their own regular car dispatching system, which is aided and supplemented by a telephone service belonging to the road, the wires being strung along the line. Other roads that may not have dispatchers place telephone boxes on their poles to enable communication between any conductor and headquarters. All of this service is independent of the local telephone system used by the public and furnished from a local exchange; and the inquiry does not include the instruments or lines that the street railway company may hire from the telephone company as a subscriber.

Stations.—By "stations" is meant separate buildings or public shelters at which passengers wait to take cars, pay fares, or secure transfers; and usually the transfer points will be much more numerous than the stations. The word is not intended to include, in any way, stopping points or open-air stations along a line where passengers can mount and dismount, and which are often designated by a sign to that effect placed on an adjacent pole.

Horses.—Give the total number of horses owned and used in any capacity in connection with the road.

Parks, pleasure resorts.—These are a feature of modern street railway business and often a large source of income. They have frequently been created by the companies themselves on their lines, and the data should be readily obtainable in every case. The agent must not, however, include in the return parks and pleasure grounds belonging to the community and entered by street railway systems; but if the company pays for the privilege of touching at these points a memorandum should be made of that fact, and the number of passengers thus specifically delivered within such pleasure resorts should be noted, if possible, as distinguished from traffic on lines terminating outside public parks or running around them.

INQUIRY 17.—TRACK.

The entire length of all track operated must be reported. The total mileage of first and second track must agree with the totals given in answer to Inquiry 12.

"Single track" means one set of rails in any thoroughfare. "Second track" means another pair of rails running alongside the first, so that cars can pass each other in opposite directions. Even in some of the largest cities there will be but one track in one street, the return route running parallel on another street nearby. On the other hand, there are streets that have three and four street railway tracks in them. It is desired to secure these details itemized, so that when the second track, and the length of sidings and turn-outs, is added to the single track, there will appear the total mileage of track owned by each road. At the same time, the return will then exhibit the proportion or extent to which single tracks and double tracks occupy the streets.

Right of way.—This term applies practically to rural electric railways, many of which have bought or have had surrendered to them a separate roadbed, either adjoining the highway or running across lots, in the same manner as a steam railroad. Occasionally the railway will not own the private right of way over which it runs, an instance of which would be a toll bridge owned by a bridge company to whom payment for the privilege is made.

Number of miles within city or municipal ordinance limits.—The object of this inquiry is to ascertain the miles of track within the incorporated limits of the different cities in which the road is located.

INQUIRY 18.—ELECTRIC LINE CONSTRUCTION.

In only one or two places will the agent find "double overhead" trolleys. The universal American practice is "single overhead" trolleys. In the former there are two trolley pole contacts above the car, by one of which the current flows into the car motors and by the other of which it flows out, or "completes the circuit." In this manner the track is not electrified. With the single overhead system, the current is led to the motors by the single overhead contact wheel and pole, and then the circuit is completed through the wheels and the track, the rails of which are all welded together or else are united into one continuous circuit by "rail bonds," i. e., usually pieces of copper fixed at each rail joint, and the whole network being connected to the dynamos at the generating power plant. The overhead trolley wire is held up between two sets of poles and sustained by "span wires," or it is held up by "center poles" placed in the middle of the thoroughfare and supporting a trolley wire on either side, above each track; or it is held up by side poles with "brackets." Iron or steel or wooden poles are usually used.

INQUIRY 19.—CARS, ETC.

Every street railway company keeps a close account of its rolling stock, and, though there are many varieties, they will all fall under the headings enumerated. Some cars, however, serve for more purposes than one, and these must not be counted twice. Closed cars or open cars that carry material and mail as well as passengers must be enumerated once only, as closed cars or as open cars; and a mail car that carries express and freight, or vice versa, must be treated only as a mail car or as an express car. The headings "mail," "express and freight," etc., designate cars that are solely and specifically devoted to such several uses. "Snowplows" and "sweepers" are often a composite vehicle, and in such cases must be counted only once, under either head.

INQUIRY 20.—FENDERS AND BRAKES.

The fender is usually a removable piece of apparatus, and where all the cars of a road are so equipped that fenders can be put on them when they are run out of the car barn for service, they should all be enumerated as equipped with fenders. If a car has no

fender attachments, it should not be counted here. "Brakes" are a permanent fixture on any car, and in the majority of instances will be of the ordinary "hand" kind. "Air" brakes are set by air compression mechanism and comprise those in which electric motors drive the air pumps. A few cars have "electric brakes," which are in reality "magnetic," and are often so called, a metallic cheek being clutched magnetically against the face of the wheel so as to arrest its motion. A track brake is one which engages with the track and not with the wheel, and may be of an electric character; but in the latter case it should be included under the electric class and a memorandum attached noting this fact.

INQUIRY 21.—HEATING OF CARS.

Give the number of cars heated by the different methods enumerated.

INQUIRY 22.—LIGHTING OF CARS.

Account for the total number of passenger cars, giving separately the number lighted by electricity, gas, and oil, respectively.

INQUIRY 23.—WEIGHT OF RAILS.

Give the maximum and minimum weight per yard of the steel rails in use at the time of making the report. It is likely that many street railway systems will have more than one weight of rail; the heaviest being used in cities, the lightest in the outskirts or where supported on ties and sleepers. If possible the style of rail should be noted, as indicated in the schedule. The agent may be informed of the existence of some iron rail, but this should be disregarded, as such rail has virtually gone out of manufacture and use.

INQUIRY 24.—CONDUIT SYSTEM FOR DISTRIBUTION.

This is intended to cover only conduit systems employed by the street railway company itself for the reception of its mains and feeders, it being required in many towns and cities that these go off the poles and be put underground. It is desired to ascertain how far the streets have been relieved by conduit systems of such obstructions, and the facts are readily obtainable. The return is asked for in "miles of duct," this meaning miles of separate pipe-way, each pipe-way receiving one cable or wire. Underground conduit is usually manufactured so that when laid under the street it presents several ducts or holes to be filled with electric cable for carrying current. One mile of street laid with conduit of six holes would thus represent 6 miles of duct. In cases where the feeders are inclosed in the conduit of underground trolley systems, note that fact and give the miles of conduit in which the feeder is carried.

INQUIRY 25.—BRIDGES BUILT FOR ROAD.

The object of this inquiry is to ascertain the number, character, and length of the bridges built by or for the use of the road. Do not account for the bridges over which the road has obtained the privilege of laying its tracks, but which were not built primarily for that purpose. The inquiry applies particularly to roads operated in rural districts.

INQUIRY 26.—POWER PLANT EQUIPMENT.

These are details that should in every instance be readily obtainable. If the manager or superintendent does not know the capacity of his boilers, he will probably know that of his engine, or of his dynamo, and all are closely related. The boiler capacity is almost invariably installed larger than the engine requires, and the engine has always a margin of more power than the dynamo calls for. Thus a dynamo of 150 horsepower will be driven by an engine of 175 horsepower, and the engine will be supplied with steam from a boiler that can furnish 200 horsepower. "Auxiliary engines" will sometimes be found in small railways, but in the larger plants they or electric motors are in common use to drive pumps, etc., and the superintendent or manager can readily enumerate them.

INQUIRY 27.—ELECTRICAL GENERATORS.

At the period covered by this inquiry every electric railway in the United States is operated by direct current motors, and current to those motors is furnished either by direct current generators (i. e., dynamos) or by "converters" which take alternating current from large alternating polyphase generators and convert it into direct current for consumption at the cars. There will be no difficulty in ascertaining the facts as to these different classes of apparatus, as only the larger systems employ alternating current for widespread distribution, and then usually in connection with substations, to which such current is delivered to be passed through transformers and converters so that it may be adapted for use by the direct current motors. Storage batteries are used, either in the main power plants or in the substations, to help maintain a steady supply of current at the right pressure, and "boosters" are dynamos assisting to the same end. The substation is particularly a feature of long distance rural electric railway work, but in every instance such roads have competent engineers, who can give the data should it not be in possession of the management.

INQUIRY 28.—SUBSTATION EQUIPMENT.

The feature of substation equipment is that it does not generate current, but receives it, manipulates it, stores it, and lowers the pressure or changes the form for local consumption. All the generating plants will usually be found in the generating stations, but sometimes substation apparatus will be found under the same roof as the generating main plant apparatus.

INQUIRY 29.—MAINS AND FEEDERS.

This inquiry does not mean the wire with which the trolley wheel makes contact, but has reference to the heavy circuits which bring current to feed the conductor. These mains and feeders in some places are still carried on poles, and are tapped at numerous points so that the current can be fed into the service conductor; but it is a rapidly growing practice to relieve the poles of their burden and to get them underground out of the way.

INQUIRY 30.—OUTPUT OF STATION.

This is an inquiry in regard to which some roads may have no data, although in many of them it is a matter of careful scientific accounting. In every case, the volts multiplied by the amperes will give the number of watts. A kilowatt is 1,000 watts. There are 746 watts in the old familiar horsepower, so that a kilowatt is roughly $1\frac{1}{4}$ horsepower. Watt hours are the product of watts multiplied by the number of hours during which the current is in use. Thus a power house with a dynamo delivering current to the line of 1,000 amperes at 550 volts pressure is generating 550,000 watts, or 550 kilowatts. If these 550,000 watts are furnished on an average twenty hours daily, we get 11,000,000 watt hours or 11,000 kilowatt hours. The total for the year can be arrived at from the daily total, and the horsepower of current can be figured from the kilowattage, or vice versa, by the simple calculation above given.

To facilitate the answers to the inquiries concerning financial operations, the Office has adopted the system of accounting devised by the Street Railway Accountants' Association of America and approved and recommended by the National Association of Railroad Commissioners. It is presumed that all street railway companies are familiar with this system of accounting, but the following instructions in regard to the items to be included in the answer to each inquiry are given to assist in their compilation:

In the following classification, "Labor" should be understood to mean, not only the manual work of laborers, but also superintendence, supervision, clerical work, engineering, and inspection, so far as they are chargeable to the account referred to.

"Material" should be understood to mean, not only finished or

unfinished products, appliances, or parts, but such smaller articles as are usually termed "supplies."

"Tools" should be understood to mean hand tools of mechanics and other tools used in the work chargeable to the account referred to.

"Expenses" should be understood to mean all expenses chargeable to the account referred to, that are not labor, material, or tools.

The cost of replacement, renewal, or repair of property destroyed or injured by fire, worn out, or otherwise unfitted for use, should be charged to the appropriate maintenance account, which should be credited with the amount received for insurance or realized from the sale of property so unfitted for use. But if the property substituted is of greater value than the original property, the excess should be charged to the capital or construction account to which the original property was charged; if of less value, the difference between the value of the property as repaired, renewed, or replaced, and its original cost or value should be credited to the capital or construction account to which the first cost was charged. So proceeds from the sale of scrap material should be credited to the account to which the cost of replacement of that material is charged, or, if not replaced, to the original cost account.

The cost of experiments should be charged in operating expenses to the account most affected.

INQUIRY 31.—CONSTRUCTION AND EQUIPMENT.

In cases where the road was purchased, or constructed under a contract, a lump sum being paid for the entire plant, it may be impossible to obtain separate amounts for each of the items specified. The total cost should then be ascertained and a careful segregation made which must be approved by the person furnishing the information.

1. *Organization*.—All expenses incurred in effecting organization, including legal expenses.

2. *Engineering and superintendence*.—All expenditures for services of engineers, draftsmen, and superintendents employed on preliminary and construction work, and all expenses incident to the work.

3. *Right of way*.—All expenditures in connection with securing or paying for right of way, including cost of real estate for right of way.

4. *Track and roadway construction*.—All expenditures for track and roadway construction, including labor, materials, tools, freight, hauling, distribution of material, and all other expenses incident to the work; cost of grading, excavating, track laying, ties, yokes, slot rails, manhole frames and covers, rails, rail fastenings, welded joints, special work (such as crossings, cross-overs, curves, frogs, guard rails, run-offs, switches, switch mates, turn-outs), ballasting, paving, fences (right of way), bridges and culverts, trestles, subways, and tunnels.

The cost of tracks in yards, terminals, car houses, or other buildings should be charged to this account.

The cost of punching and drilling rails for track wiring should be charged to account 5.

5. *Electric line construction*.—All expenditures for overhead, underground, third-rail, or surface contact electric line construction, including labor, material, tools, freight, hauling, distribution of material, and all other expenses incident to the work; cost of punching and drilling rails for track wiring, rail bonds, poles (iron and wood), labor and material for setting and painting poles; feed wire, guard wire, span wire, strain wire, supplementary wire, trolley wire, ground feeders, underground feeders, pole fixtures, hangers or suspensions, insulators (overhead), lightning arresters and appliances, signals and signaling apparatus, overhead crossings and switches, ground terminals, and all labor in connection with putting same in position; conduits and conduit appliances for underground trolley construction, including conductors, insulators, sewer connections, sewer traps, and underground feeders; third rails, and insulators for third-rail construction; surface contact appliances for surface contact roads, including magnets, contact boxes, manhole frames and covers.

6. *Real estate used in operation of road*.—All expenditures for real estate used in operation of road, except real estate used for right of way, which should be charged to account 3.

7. *Buildings and fixtures used in operation of road*.—All expenditures for buildings and fixtures used in operation of road, including labor, material, tools, freight, hauling of material, and all other expenses incident to the work. The term "buildings and fixtures" includes power houses, car houses, shops, office buildings (when owned by the company), waiting rooms, sheds, outhouses, coal bins, sand houses, stables, storehouses, switch tenders' houses, fences (except park and right of way), docks, wharves, and all other buildings and inclosures, and their stationary fixtures, including pipes for gas, water, sewage, and drainage, apparatus for heating, lighting, and ventilating, sidewalks, and paving in streets in front of and adjacent to the company's buildings (except in tracks), and inspection and repair pits in car houses, shops, or other buildings. The cost of tracks in yards, terminals, car houses, and other buildings should be charged to account 4. The cost of electric line in yards, terminals, car houses, and other buildings should be charged to account 5.

8. *Investment real estate*.—All expenditures for land and buildings not used in operation of road.

9. *Power plant equipment*.—All expenditures for steam and electric equipment of power plant, including foundations and installation. The equipment of substations (if used) should be charged to this account. All expenditures for waterpower machinery (if used) should be charged to this account. The cost of buildings used for main power house or substations should be charged to account 7.

10. *Shop tools and machinery*.—All expenditures for shop tools and machinery for general repair shops, car houses, etc., including foundations and installation.

11. *Cars*.—All expenditures for passenger, baggage, express, freight, mail, and other cars from the operations of which revenue is derived. The term "cars" includes car bodies and trucks, and all fixtures or appliances inside of or attached to the car body or truck (except the electric equipment of the car).

12. *Electric equipment of cars*.—All expenditures for electric equipment and wiring of all cars, whether revenue cars or work cars, including labor, material, tools, freight, hauling of material, and all other expenses incident to the work.

13. *Miscellaneous equipment*.—All expenditures for water cars, sprinkling cars, sand cars, salt cars, supply cars, and other work cars; snowplows, sweepers, scrapers, and miscellaneous snow equipment; horses, harness, wagons, and vehicles; tools and appliances necessary in the use of work cars or snow equipment.

14. *Interest and discount*.—All interest paid or received in connection with funds for construction, and all discounts or premiums resulting from the negotiation of securities for construction, should be charged or credited to this account.

15. *Miscellaneous*.—All expenditures for printing and stationery, office supplies and expenses, damage claims, wages of clerks, and all other expenses incident to construction not otherwise provided for.

Electric light and power service.—Amounts are to be reported in answer to this inquiry when electric current is sold for light, power, or other purposes. Include all expenditures for electric plant, line construction, lamps, motors, etc., that have not been included in the other items which pertain to the construction and equipment of the railway plant and line.

INQUIRY 32.—OPERATING EXPENSES.

1. *Maintenance of track and roadway*.—All expenditures for repairs and renewals of track and roadway, of culverts and subways, of tracks in yards, terminals, car houses or other buildings, including labor, material, tools, fuel, light, water, ice, freight, hauling, and distribution of material, and all other expenses incident to the work.

The cost of taking up track, whether new track is laid in its place or not, should be charged to this account.

The cost of punching and drilling rails for repairs or renewals of track wiring, and of removing and relaying pavement, ballast, etc.,

when necessary for repairs or renewals of the electric line, should be charged to account No. 2.

The cost of repairs and renewals of harness and wagons used in connection with this work should be charged to account No. 8.

The cost of feed and keep of horses used in connection with this work should be charged to account No. 30.

Following is a list of some of the items chargeable to this account:

| | |
|--|--|
| Ballast. | Lumber. |
| Bolts. | Manhole covers, for underground trolley. |
| Braces, rail. | Manhole frames, for underground trolley. |
| Brick. | Molds, for welded joints. |
| Bridges. | Nails. |
| Cement. | Nuts. |
| Chairs, for rails. | Nut locks. |
| Cinders, for ballast. | Paving materials. |
| Coke, for welding joints. | Pig iron, for welded joints. |
| Clamps, for welded joints. | Pipes, drain. |
| Crossings. | Rails. |
| Cross-overs. | Run-offs. |
| Culverts. | Sand. |
| Curves. | Screws. |
| Drains. | Slot rails, for underground trolley. |
| Fences, right of way. | Spikes. |
| Fish plates. | Steel. |
| Freight. | Stone. |
| Frogs. | Subways. |
| Fuel. | Switches. |
| Guard rails. | Switch mates. |
| Gravel. | Ties. |
| Hauling. | Tie plates. |
| Ice, for ice water. | Tie rods. |
| Iron. | Tools. |
| Joints, welded. | Trestles. |
| Joints, not welded. | Tunnels. |
| Labor. | Turn-outs. |
| Light (lanterns and fixtures, oil, lampwicks, torches, candles, incandescence lamps and fixtures, arc lights and fixtures, globes, and carbons). | Washers. |
| | Water. |
| | Yokes, for underground trolley. |

2. *Maintenance of electric, cable, etc., lines.*—All expenditures for repairs and renewals of overhead, underground, third-rail, or surface contact electric lines, and cable line, including labor, material, and tools employed or used in taking up, resetting, and painting and repainting poles, taking down trolley, feed, guard, and supplementary wires, and substituting new, repairing and renewing conduits for wires, repairing and renewing bond wires, punching and drilling rails for track wiring, removing and relaying pavement, ballast, etc., when necessary for repairs or renewals of the line, freight, hauling and distribution of material, fuel, light, water, and ice, and all other expenses incident to the work.

The cost of repairs and renewals of electric lines in yards, terminals, car houses, or other buildings should be charged to this account.

The cost of feed and keep of horses used in connection with this work should be charged to account No. 30.

The cost of repairs and renewals of harness and wagons used in connection with this work should be charged to account No. 8.

Following is a list of some of the items chargeable to this account:

| | |
|---|---|
| Bolts. | Manhole covers, for surface contact roads. |
| Boxes, for lightning arresters. | Manhole frames, for surface contact roads. |
| Cement. | Nuts. |
| Charcoal. | Painting material, for poles. |
| Clamps, for poles. | Pins, iron, for cross arms. |
| Conductors, for underground trolley. | Pins, wood, for cross arms. |
| Conduits. | Poles, iron. |
| Contacts, for surface contact roads. | Poles, wood. |
| Contact boxes, for surface contact roads. | Pole tops, for iron poles. |
| Cord. | Rail bonds. |
| Cross arms, iron. | Sand. |
| Cross arms, wood. | Screws. |
| Crossings. | Sewer connections, for underground trolley. |
| Feeders, ground. | Sewer traps, for underground trolley. |
| Feeders, overhead. | Signals and signaling apparatus. |
| Feeders, underground. | Solder. |
| Freight. | Soldering salts. |
| Fuel. | Steel. |
| Gasoline. | Stone. |
| Hangers. | Suspensions. |
| Hauling. | Switches. |
| Ice, for ice water. | Tape, insulating. |
| Insulators, overhead. | Terminals. |
| Insulators, underground. | Third rails. |
| Insulators, for third rail. | Tools. |
| Iron. | Washers. |
| Labor. | Water. |
| Light (lanterns and fixtures, oil, lampwick, torches, candles, incandescence lamps and fixtures, arc lights and fixtures, globes, and carbons). | Wire, feed. |
| Lightning arresters and parts. | Wire, guard. |
| Magnets, for surface contact roads. | Wire, span. |
| | Wire, strain. |
| | Wire, supplementary. |
| | Wire, trolley. |

3. *Maintenance of buildings and fixtures.*—All expenditures for repairs and renewals of buildings and fixtures used in the operation of the road, including labor, material, tools, freight, hauling of material, and all other expenses incident to the work.

The term "buildings and fixtures" includes power houses, car houses, shops, office buildings (when owned by the company), waiting rooms, sheds, outhouses, coal bins, sand houses, stables, storehouses, switch tenders' houses, fences (except park and right of way fences), docks, wharves, and all other buildings and inclosures, and their stationary fixtures, including pipes for gas, water, sewage, and drainage, apparatus for heating, lighting, and ventilating, sidewalks and pavements in front of and adjacent to the company's buildings (except in tracks), and inspection and repair pits in car houses, shops, or other buildings.

The cost of repairs and renewals of tracks in yards, terminals, car houses, or other buildings should be charged to account No. 1.

The cost of repairs and renewals of electric lines in yards, terminals, car houses, or other buildings should be charged to account No. 2.

Following is a list of some of the items chargeable to this account:

| | |
|--|-------------------------------------|
| Awnings. | Pipes, drain. |
| Bolts. | Pipes, gas. |
| Bolt ends. | Pipes, sewer. |
| Brick. | Pipes, water. |
| Builders' hardware. | Pits in car houses and shops. |
| Building material. | Plumbing. |
| Building permits. | Rivets. |
| Cement. | Roofing material. |
| Cisterns. | Sand. |
| Drains. | Sash cord. |
| Excavations. | Sash weights. |
| Fences (except park and right of way). | Scales, platform. |
| Foundations. | Screws. |
| Freight. | Sewering. |
| Grading. | Shelving and other fixtures. |
| Hauling. | Shingles. |
| Heating apparatus and fixtures. | Sidewalks. |
| I-beams. | Slate. |
| Iron. | Spikes. |
| Labor. | Steel. |
| Laths. | Stone. |
| Lighting apparatus and fixtures. | Tools. |
| Lime. | Tile. |
| Lumber. | Turn-buckles. |
| Nails. | Ventilating apparatus and fixtures. |
| Nuts. | Washers. |
| Painting materials (oil, turpentine, varnish, lead, painters' supplies). | Water. |
| Paving in streets (except in connection with tracks). | Water connections. |
| Plaster. | Water meters. |
| | Wells. |
| | Wire. |

4. *Maintenance of steam plant.*—All expenditures for labor, material, tools, freight, hauling of material, and all other expenses incident to repairs and renewals of steam plant or waterpower plant, including engines and engine parts, appliances and fixtures, belts, belt tighteners and fixtures, receivers, lubricators, and oiling devices; shafting, clutches, cranes, hoists, and other, engine room appliances; boilers, boiler fittings and appliances; furnaces, economizers, stacks, mechanical draft machinery, pumps, feed water heaters, purifiers, tanks, condensers, coal and ash conveying machinery, mechanical stokers, and other boiler room appliances; piping and steam fitting, including valves, separators, water and sewer connections, and water meters.

Following is a list of some of the items chargeable to this account:

| | |
|---------------------------|-----------------------|
| Ash conveying machinery. | Hoists. |
| Belts. | Injectors. |
| Belt fixtures. | Iron. |
| Belt tighteners. | Labor. |
| Boilers. | Lubricators. |
| Boiler appliances. | Oiling devices. |
| Boiler fittings. | Piping. |
| Bolts. | Pipe covering. |
| Cement. | Pipe fittings. |
| Clutches. | Pulleys. |
| Coal conveying machinery. | Pumps. |
| Condensers. | Purifiers. |
| Cranes. | Receivers. |
| Draft machinery. | Screws. |
| Economizers. | Separators. |
| Engines. | Sewer connections. |
| Engine appliances. | Shafting. |
| Engine fixtures. | Stacks. |
| Engine parts. | Steam fittings. |
| Fire brick. | Steel. |
| Fire clay. | Stokers, mechanical. |
| Freight. | Tanks. |
| Furnaces. | Tools. |
| Grate bars. | Water connections. |
| Hauling. | Water meters. |
| Heaters, feed water. | Waterpower machinery. |

5. *Maintenance of electric, cable, etc., plant.*—All expenditures for labor, materials, tools, freight, hauling of material, and all other expenses incident to repairs and renewals of plant, including generators and generator parts, switchboards, cables, and feeder terminals and wiring in connection with same, storage batteries, transformers, boosters, rheostats, circuit breakers, ammeters, and other electric equipment.

Commutator brushes for generators should be charged to account No. 14.

Following is a list of some of the items chargeable to this account:

| | |
|-------------------|--------------------------------|
| Ammeters. | Labor. |
| Boosters. | Lightning arresters and parts. |
| Cables. | Rheostats. |
| Circuit breakers. | Storage batteries. |
| Feeder terminals. | Switchboards. |
| Freight. | Switches. |
| Generators. | Tools. |
| Generator parts. | Transformers. |
| Hauling. | |

6. *Maintenance of cars.*—All expenditures for repairs and renewals of passenger, baggage, express, freight, mail, and other cars from the operation of which revenue is derived, including labor, material, tools, freight, hauling of material, and all other expenses incident to the work.

The term "cars" includes car bodies and trucks and all fixtures or appliances inside of or attached to the car body or truck, except the electric equipment of the car.

The cost of cars purchased to keep good the original number of cars should be charged to this account.

Bell and register cord, trolley rope, incandescent lamps, commutator brushes, and other supplies for cars should be charged to account No. 21.

Following is a list of some of the items chargeable to this account:

| | |
|-----------------------------------|----------------------------------|
| Axles. | Labor. |
| Bells. | Life guards. |
| Bell cord fixtures. | Lumber. |
| Bolts. | Mirrors. |
| Brakes (hand or power). | Nails. |
| Brake appliances (hand or power). | Nuts. |
| Brake shoes. | Oil boxes. |
| Brasses. | Painting material. |
| Brass fixtures. | Pedestals. |
| Brass trimmings. | Plots. |
| Bumpers. | Sand boxes, attached to cars. |
| Canvas. | Screws. |
| Cotters. | Seats. |
| Curtains. | Seat covering. |
| Curtain fixtures. | Seat fixtures. |
| Dashes and parts. | Signs. |
| Drawbars. | Sign fixtures. |
| Electric heaters. | Snow scrapers, attached to cars. |
| Electroliners. | Springs. |
| Fare registers. | Steel. |
| Fenders and parts. | Steps. |
| Floor mats. | Stoves. |
| Freight. | Stove fixtures. |
| Gates. | Tools. |
| Glass. | Trucks. |
| Gongs. | Truck frames and parts. |
| Grab handles. | Washers. |
| Hauling. | Wheels. |
| Headlights and parts. | Woodwork. |
| Iron. | |

7. *Maintenance of electric, cable, equipment of cars.*—All expenditures for repairs and renewals of the electric or cable equipment and wiring of cars, whether revenue cars or work cars, including labor, material, tools, freight, hauling of material, and other expenses incident to the work.

The cost of shifting electric equipments from summer to winter cars, or vice versa, should be charged to this account.

The cost of equipments purchased to keep good the original number of equipments should be charged to this account.

The cost of commutator brushes, incandescent lamps, oil, and other supplies for the electric equipment of cars should be charged to account No. 21.

Following is a list of some of the items chargeable to this account:

| | |
|---|--|
| Armatures and parts. | Labor. |
| Bearings. | Light circuits. |
| Bolts. | Lightning arresters and parts. |
| Brasses, armature, axle, gear case. | Motor frames. |
| Brush holders and parts. | Nuts. |
| Canvas. | Pinions. |
| Circuits, for heat, light, power. | Plows, for underground trolley cars. |
| Circuit breakers, automatic. | Power circuits. |
| Commutators and parts. | Rheostats. |
| Contact shoes for surface contact cars. | Screws. |
| Contact shoes for third rail cars. | Shafts. |
| Controllers and parts. | Springs. |
| Cotters. | Steel. |
| Cut-out boxes and parts. | Storage batteries, for storage battery cars. |
| Fields and parts. | Tape. |
| Frames, for motors. | Terminals. |
| Freight. | Tools. |
| Gears. | Trolley bases. |
| Gear cases and parts. | Trolley forks. |
| Hauling. | Trolley poles. |
| Heat circuits. | Trolley wheels and parts. |
| Insulating material. | Washers. |
| Iron. | Wiring. |

8. *Maintenance of miscellaneous equipment.*—All expenditures for repairs and renewals of water cars, sprinkling cars, sand cars, salt cars, supply cars, other work cars, snowplows, sweepers, scrapers, miscellaneous snow equipment, wagons, and all other vehicles not operated for the purpose of revenue, including labor, material, tools, freight, hauling of material, and all other expenses incident to the work.

Replacing horses lost by death or worn out in the service, depreciation in value of horses, and repairs and renewals of all harness and vehicles should be charged to this account.

Repairs and renewals of the electric equipment of all work cars, snowplows, sweepers, etc., should be charged to account No. 7.

Following is a list of some of the items chargeable to this account:

| | |
|-----------------------------------|---------------------------------------|
| Axles. | Labor. |
| Bolts. | Life guards. |
| Brakes (hand or power). | Lumber. |
| Brake appliances (hand or power). | Nails. |
| Brake shoes. | Nuts. |
| Brasses. | Oil boxes. |
| Brass fixtures. | Painting material. |
| Bumpers. | Pedestals. |
| Canvas. | Plots. |
| Cotters. | Rattan, for sweepers. |
| Dashes and parts. | Sand boxes, attached to work cars. |
| Drawbars. | Screws. |
| Electroliners. | Snow scrapers, attached to work cars. |
| Fenders and parts. | Springs. |
| Freight. | Steel. |
| Glass. | Tools. |
| Gongs. | Trucks. |
| Grab handles. | Truck frames and parts. |
| Hauling. | Washers. |
| Headlights and parts. | Wheels. |
| Iron. | Woodwork. |

9. *Miscellaneous shop expenses.*—All expenditures for repairs and renewals of shop tools, machinery, and appliances, such as engines, boilers, shafting, motors, etc., used in general repair work, including labor, tools, coal, coke, lubricants, waste, and other material, freight, hauling of material, fuel, light, water and ice, wages of master mechanic, shop foreman, engineers, firemen, and other employees engaged in operating shop engine, and all other expenses incident to the general repair shops.

Hand tools of mechanics or laborers used exclusively in connection with work chargeable to accounts Nos. 1 to 8, 14, 21, and 22 should not be charged to this account, but to the account benefited by their use.

Following is a list of some of the items chargeable to this account:

| | |
|---------------------------------|---------------------------------------|
| Belts and belt fixtures. | Light (lanterns and fixtures, oil, |
| Boilers and boiler fittings. | lampwicks, torches, candles, in- |
| Bolts. | candescent lamps, arc light globes, |
| Brooms. | and carbons). |
| Charcoal. | Lubricants. |
| Clutches. | Lumber. |
| Coal. | Motors and parts (for shop use only). |
| Coke. | Nails. |
| Cotters. | Nuts. |
| Cranes. | Piping. |
| Draft machinery. | Pipe covering. |
| Engines and parts. | Pipe fittings. |
| Engine appliances and fixtures. | Pulleys. |
| Fire brick. | Pumps. |
| Fire clay. | Screws. |
| Forges. | Shafting. |
| Freight. | Stacks. |
| Fuel. | Steam fittings. |
| Furnaces and parts. | Steel. |
| Hauling. | Tools, machine. |
| Heaters, feed water. | Tools, hand. |
| Hoists. | Washers. |
| Ice, for ice water. | Waste. |
| Iron. | Water. |
| Labor. | Welding compounds. |

10. *Power plant wages.*—All expenditures for labor in the power plant, except labor employed in making repairs or renewals. This includes the wages of the following employees:

| | |
|--------------------|----------------------------|
| Boiler cleaners. | Oilers. |
| Chief engineer. | Other labor (boiler room). |
| Engineers. | Other labor (engine room). |
| Firemen. | Switchboard tenders. |
| Coal passers. | Water tenders. |
| Generator tenders. | |

11. *Fuel for power.*—All expenditures for coal, oil, or gas used as fuel, or other fuel used at power plant, including freight and hauling.

12. *Water for power.*—All expenditures for water used to produce steam or to operate a waterpower plant.

13. *Lubricants and waste for power plant.*—All expenditures for lubrication of power plant, including oil, grease, waste, rags, etc.

14. *Miscellaneous supplies and expenses of power plant.*—All expenditures for operation of power plant not otherwise provided for. Following is a list of some of the items chargeable to this account:

| | |
|------------------------------------|------------------------------------|
| Boiler compound. | Matches. |
| Boiler inspection. | Mops. |
| Brooms. | Oil cans. |
| Brushes, flue. | Packing. |
| Brushes, for generators. | Polish. |
| Brushes, for scrubbing. | Sandpaper. |
| Buckets. | Soap. |
| Chamois skins. | Sponges. |
| Dusters. | Sprinkling cans. |
| Emery cloth. | Tools. |
| Fire buckets. | Water (except water charged in ac- |
| Fire extinguishers. | count No. 12). |
| Garnet paper. | Water gauge glasses. |
| Hose. | Waste cans. |
| Ice, for ice water. | |
| Light (lanterns and fixtures, oil, | |
| lampwicks, torches, candles, in- | |
| candescent lamps, arc light globes | |
| and carbons). | |

15. *Hired power.*—All expenditures for power purchased from other companies or power plants.

16. *Superintendence of transportation.*—Wages of division superintendents, their assistants and aids, road officers, inspectors, and others employed in superintending transportation.

17. *Wages of conductors engaged in operating revenue cars.*

18. *Wages of motormen engaged in operating revenue cars.*

19. *Wages of other car service employees.*—Wages of starters, transfer agents, switch tenders, trolley men, trail-car couplers, and other car service employees.

20. *Wages of car house employees.*—Wages of car house foremen, watchmen, car placers, car shifters, car and motor inspectors, car cleaners, lamp and headlight tenders, car oilers, car stove firemen, trolley oilers, and other car house employees not engaged in making repairs or renewals.

The cost of shifting cars for the purpose of repairs or renewals should be charged to account No. 6 or 7.

21. *Car service supplies.*—All expenditures for lubricants and waste for cars and electric equipment of cars, incandescent lamps,

oil and other supplies for lighting cars, water and other supplies for cleaning cars, fuel for heating cars, bell and register cord, trolley rope, commutator brushes, tools, and other materials and supplies, except such as are used for repair or renewals of cars or electric equipment of cars.

Following is a list of some of the items chargeable to this account:

| | |
|---------------------------------------|-------------------------|
| Batteries, dry, for electric bells in | Lampwicks. |
| cars. | Lubricants. |
| Bell cord. | Matches. |
| Brooms, for cars. | Mops. |
| Brushes, for car washing. | Oil cans. |
| Brushes, for motors. | Pokers. |
| Buckets, for car washing. | Polish. |
| Candles. | Rags. |
| Chamois skins. | Register cord. |
| Chimneys, for headlights. | Shakers. |
| Coal hods, for cars. | Shovels. |
| Dusters. | Soap. |
| Fuel, for cars. | Sponges. |
| Fuses. | Stove blacking. |
| Hose, for car washing. | Tools. |
| Illuminating oil. | Trolley rope. |
| Incandescent lamps. | Waste. |
| Kindling. | Water, for car washing. |

22. *Miscellaneous car service expenses.*—Expenditures for secret inspection, transfers and tickets, conductors' books, punches, portable registers, tools for motormen, employees' badges and uniforms; cost of getting derailed cars on track and removing obstructions and wreckage; miscellaneous expenses of car houses, including fuel, light, water (except water used for car washing), and ice, and all other car service expenses not otherwise provided for.

Water used for car washing should be charged to account No. 21.

Following is a list of some of the items chargeable to this account:

| | |
|------------------------------------|-----------------------------------|
| Badges, for employees. | Portable registers. |
| Buckets, for car houses. | Secret inspection expenses. |
| Brooms, for car houses. | Sprinkling cans. |
| Conductors' books. | Tickets. |
| Conductors' fare boxes. | Tools. |
| Conductors' punches. | Tools, for motormen. |
| Fire buckets. | Transfers. |
| Fire extinguishers. | Uniforms. |
| Fuel, for car houses. | Water (except water for car wash- |
| Hose, for car houses. | ing). |
| Ice, for ice water. | Wrecking expenses. |
| Light (lanterns and fixtures, oil, | |
| lampwicks, torches, candles, in- | |
| candescent lamps, arc light globes | |
| and carbons). | |

23. *Cleaning and sanding track.*—All expenditures for cleaning, erasing, watering, sprinkling, and removing dirt from track, sanding track, including wages of men engaged in the work, cost of sand and of hauling, drying, and distributing same, cost of track brooms and other tools, curve grease, water for sprinkling and watering track, and all other supplies and expenses incident to the work.

The cost of feed and keep of horses used in connection with this work should be charged to account No. 30.

The cost of repairs and renewals of harness and wagons, water, sprinkling, and sand cars used in connection with this work should be charged to account No. 8.

This account should not include cost of sprinkling rendered necessary by repairs or construction of track or paving.

The cost of sprinkling street (except tracks) in front of or adjacent to company's property should be charged to account No. 32.

Following is a list of some of the items chargeable to this account:

| | |
|-----------------------|----------------|
| Curve grease. | Shovels. |
| Fuel for sand drier. | Track brooms. |
| Sand. | Track brushes. |
| Sand drier and parts. | Water. |

24. *Removal of snow and ice.*—All expenditures for removal of snow and ice from tracks, whether done by the company or otherwise, including labor, material, tools, and expenses, cost of salt and of delivering of same in car houses or bins, and the wages of men engaged in salting track and operating snowplows, sweepers, scrapers, etc.

The cost of feed and keep of horses used in connection with this work should be charged to account No. 30.

The cost of repairs and renewals of harness, wagons, salt cars, snowplows, sweepers, scrapers, and miscellaneous snow equipment used in connection with this work should be charged to account No. 8.

25. *Salaries of general officers.*—Salaries of president, vice president, secretary, treasurer, auditor, general manager, assistant general manager, chief engineer, general superintendent, purchasing agent, and all other officers whose jurisdiction extends over the entire system.

26. *Salaries of clerks.*—The salaries of bookkeepers, cashiers, receivers, paymasters, stenographers, clerks employed in counting cash, tickets, and transfers, and all other clerks employed in the general office or elsewhere.

27. *Printing and stationery.*—Expenditures for printing, stationery, and stationery supplies, except as hereinafter provided.

The cost of printing tickets and transfers should be charged to account No. 22.

The cost of printing briefs and other legal papers should be charged to account No. 34 or 35.

The cost of printing signs, posters, and other advertising matter should be charged to account No. 31.

Following is a list of some of the items chargeable to this account:

| | |
|--------------------------|---|
| Arm rests. | Paper cutters. |
| Binders. | Paper fasteners. |
| Blanks. | Paper files. |
| Blank books. | Paper weights. |
| Blotting paper. | Pencils. |
| Carbon paper. | Pencil erasers. |
| Coin bags. | Pens. |
| Copy (impression) books. | Penholders. |
| Copying brushes. | Penracks. |
| Dating stamps. | Pins. |
| Envelopes. | Printing (except printing charged to accounts Nos. 22, 31, 34, 35). |
| Eyelets. | Rubber bands. |
| Eyelet punches. | Rubber stamps. |
| Erasers. | Rulers. |
| Hektographs. | Scrapbooks. |
| Indexes. | Sealing wax. |
| Ink. | Seals. |
| Inkstands. | Shears. |
| Ink erasers. | Shipping tags. |
| Letterpresses. | Shipping tickets. |
| Mechanical calculators. | Shorthand books. |
| Mimeographs. | Sponges. |
| Money tags. | Sponge cups. |
| Money wrappers. | Tissue (impression) paper. |
| Mucilage and brushes. | Typewriters. |
| Numbering stamps. | Typewriter supplies. |
| Oil paper. | Twine. |
| Paper (all kinds). | Wastebaskets. |
| Paper baskets. | Wrapping paper. |
| Paper clips. | |

28. *Miscellaneous office expenses.*—The cost of office supplies, repairs and renewals of office furniture, wages of janitors, porters, and messengers, and all other office expenses.

The cost of printing, stationery, and stationery supplies should be charged to account No. 27, except as otherwise provided.

Following is a list of some of the items chargeable to this account:

| | |
|--------------------------|------------------|
| Brooms. | Newspapers. |
| Brushes. | Periodicals. |
| Buckets. | Postage. |
| Chamois skins. | Soap. |
| Dusters. | Sponges. |
| Fuel. | Sprinkling cans. |
| Ice. | Towels. |
| Internal revenue stamps. | Towel service. |
| Light. | Water. |
| Maps. | |

29. *Storeroom expenses.*—Salaries and expenses in connection with storerooms, including cost of sending material and supplies from general storeroom to branch storerooms, and the collecting of scrap material.

30. *Stable expenses.*—The cost of feed, keep, and shoeing of horses, and all other expenses.

This account should include the stable expenses of all horses, regardless of where they are used.

Replacing horses lost by death or worn out in service, depreciation in value of horses, and repairs and renewals of harness and vehicles should be charged to account No. 8.

Following is a list of some of the items chargeable to this account:

| | |
|------------------------|--------------------------------|
| Bedding. | Horseshoeing supplies. |
| Blankets. | Horseshoeing (by contract). |
| Brooms. | Hose. |
| Brushes. | Hostlers, wages of. |
| Buckets. | Ice. |
| Chamois skins. | Light. |
| Currycombs. | Medicine. |
| Dusters. | Salt. |
| Feed. | Sponges. |
| Fire buckets. | Sprinkling cans. |
| Fire extinguishers. | Stablemen, wages of. |
| Fuel. | Veterinarian (salary or fees). |
| Horseshoers, wages of. | Water. |

31. *Advertising and attractions.*—The cost of advertising of every description, including printing handbills, dodgers, posters, folders, etc., net expense of music, parks, park properties and resorts (after deducting all income from admittance fees, sale of privileges, etc.), and all donations made and other expenses incurred for the purpose of attracting travel.

32. *Miscellaneous general expenses.*—The cost of public telephone service, maintaining and operating private telephone systems, telegrams, subscriptions, and donations (except those provided for in account No. 31), traveling expenses of general officers and others connected with general office, and contingent expenses connected with the general management not otherwise provided for.

33. *Damages.*—Expenditures on account of property damaged and persons killed or injured, salaries and expenses of claim agents, investigators, adjusters, and others engaged in the investigation of accidents and adjustment of claims, salaries, fees and expenses of surgeons and doctors, nursing, hospital attendance, medical and surgical supplies, fees and expenses of coroners and undertakers, fees of witnesses and others, except lawyers' fees and court costs and expenses.

Following is a list of some of the items chargeable to this account:

| | |
|---|----------------------------------|
| Accident insurance premiums. | Doctors' fees or salaries. |
| Adjusters' expenses. | Funeral expenses. |
| Adjusters' salaries. | Hospital expenses. |
| Claim agents' expenses. | Investigators' expenses. |
| Claim agents' salaries. | Investigators' salaries. |
| Coroners' fees and expenses. | Medical supplies. |
| Damage claims for ejection from cars. | Nurses' expenses. |
| Damage claim for electrolysis. | Nurses' fees. |
| Damage claims for horses killed or injured. | Premiums for accident insurance. |
| Damage claims for persons killed or injured. | Surgeons' expenses. |
| Damage claims for property damaged. | Surgeons' fees. |
| Damage claims for wagons or vehicles damaged. | Surgeons' salaries. |
| Doctors' expenses. | Surgical supplies. |
| | Undertakers' expenses. |
| | Undertakers' fees. |
| | Witnesses' expenses. |
| | Witnesses' fees. |

34. *Legal expenses in connection with damages.*—All legal expenses incurred in connection with the defense or settlement of damage claims.

The compensation of the general solicitor or counsel and other attorneys engaged partly in the defense and settlement of damage suits and partly in other legal work should be apportioned between this account and account No. 35.

The term "legal expense" should be understood to include the salary of general solicitor or counsel, salaries, fees, and expenses of attorneys, fees of court stenographers, unless included in court costs, cost of law books, printing of briefs, court records, and other papers, court costs, expenses connected with taking depositions, and all other court expenses.

35. *Other legal expenses.*—All legal expenses except those incurred in connection with the defense or settlement of damage claims.

The compensation of the general solicitor or counsel, and other attorneys engaged partly in the defense and settlement of damage

suits and partly in other legal work should be apportioned between this account and account No. 34.

36. *Rent of land and buildings.*—All rents paid for land and buildings used in the operation of the road.

37. *Rent of tracks and terminals.*—All rents paid for tracks and terminals, bridge rentals, and tolls. The word "terminals" is not meant to refer to depots, car houses, or other buildings at the termini of the road. Rents for these should be charged to account No. 36.

38. *Insurance.*—The cost of fire and boiler insurance.

Wages, etc.—Wages, supplies, and expenses incidental to the generation of current for sale, not included in any other of the above items. Amounts are to be reported for railway companies that sell electric current for light or power. Include all expenditures incident to the generation and sale of electric current and which have not been included in the answer to any of the other inquiries.

INQUIRY 33.—INCOME ACCOUNT.

Give only the actual cash received and disbursed during the year. Do not include bookkeeping items.

Chartered cars.—It is a practice on many street railways to hire out cars for special travel purposes. These are usually known as "chartered" cars, a definition which includes parlor cars, observation cars, theater cars, etc. For all of this class of work it is the custom to make a special and separate rate, and the roads doing this business should have no difficulty in giving the receipts from it.

Freight, mail, or express.—Of late years, street railways, and particularly suburban electric lines, have taken up the carriage of freight and express. Provision is made separately for receipts from these items, but it is possible they may be obtainable only as a lump sum, although it is desirable to separate them.

Miscellaneous income.—This item must include all amounts received from sources other than those enumerated, such as income from advertising, pleasure resorts, interest on deposits, from securities owned, leased lines, etc. The total must be the gross income of the company for the year.

"Miscellaneous taxes" include special taxes, such as car licenses, special taxes for police service at street crossings, but in such cases a note must be made on the schedule describing the tax or license.

INQUIRY 34.—BALANCE SHEET.

This condensed statement must balance and show the financial condition of the company on June 30, 1902, or the last day of the year for which the report is made. Any large items which would come under the head of "Sundries" should be stated specifically.

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INQUIRIES 35-36.—CAPITAL STOCK AND FUNDED DEBT.

Account for the entire amount of stock and bonds issued. Give full amount of dividends paid during the year. In some cases companies have been reorganized or consolidated and the new company has issued stock, the new stock being accepted by the holders of the original stock which was surrendered to the new company. The new company may also issue bonds and assume the debt represented by the bonds of the original companies, which may or may not be retired. In such cases there may be no cash realized on either the stock or bonds of the new company, but the amount of stock and bonds issued by the new company and also the stock and bonds of the original company outstanding must be given, and the agent should attach a memorandum to the schedule, giving a full explanation of the issues of both stock and bonds. The amounts of the old and new companies should be given separately.

INQUIRY 37.—EMPLOYEES, SALARIES, WAGES, ETC.

The salaries and wages reported here will also be included in the amounts reported for the different items, under Inquiry 32, "Operating Expenses," but this statement is required in order to obtain the number and wages for each class of employees. Account for all persons employed by the company, both in the management and in the operation of the road. Give the number of officers who receive salaries (not the number of stockholders) and the gross amount of their salaries. Report separately the number and wages of conductors, motormen, and other classes of employees specified. The salaries and wages should include board or rent furnished as part compensation. The average number employed during the year, is the number that would have continuous employment for the twelve months. There should be no difficulty in securing this information for the road of ordinary size, but it may be that the large companies keep an itemized pay roll, the total only being carried forward from each week or month. In such cases it will be necessary to either add the pay roll of each week or month, for each class of employees, or compute the aggregate for each class, using a pay roll for a representative week or month as the base. Results obtained by the latter method will be accepted.

INQUIRY 38.—NUMBER OF EMPLOYEES AT SPECIFIED DAILY RATES OF PAY.

This inquiry is designed to ascertain the number of employees for each of the 16 classes enumerated that receive daily rates of pay specified. If there are other daily rates enumerate them and give the number employed at each; also give the hour rates for overtime for each of the 16 classes.